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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,233	08/20/2001	Jun Yamada	GOT 142 NP	6125

23995 7590 12/12/2002

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EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/868,233

Applicant(s)

YAMADA ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 5-6, 9-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (WO 97/47491) in view of Deng et al. (U. S. Pat. 6,047,787).

Koike et al. disclose a hybrid drive device for use in a hybrid vehicle, the hybrid vehicle having a generator (2) which is connected to an engine (1) for driving the generator (2) and to a first converter (4) for converting alternating current generated by the generator (2) to direct current for charging a storage device (17) connected to the first converter (4), and an inverter (4) which is connected to the first converter (4) and the storage device (17) and which converts alternating current generated by an electrical motor (2) during regenerating operation to direct current for charging the storage device (17),

wherein the electrical motor (2) is connected to the inverter (4) and drives at least one wheel of the hybrid vehicle with electrical power from the storage device (17) and/or electrical power from the generator; and

wherein the storage device (17) includes:

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a condenser bank (figure 2) having a plurality of condenser cells (17) connected in series;

a plurality of parallel monitors (19), each parallel monitor (19) being connected in parallel to a corresponding one of the condenser cells (17), monitoring a terminal voltage of the corresponding condenser cell (17), and conducting a direct current so as to bypass the corresponding condenser cell (17) if the terminal voltage of the corresponding condenser cell (17) exceeds a fixed voltage (*according to GB 2,319,407, which is a translation of the Japanese document*).

Koike et al. disclose that the storage device (17) is charged with electrical power generated by the electrical motor (2) during regeneration or with excess electrical power of the generator (2), and the stored electrical power in the storage device (17) is supplied to the electrical motor (2) when a large amount of power is required during vehicle acceleration.

However, Koike et al. do not disclose that the second converter is a bidirectional switching converter which is connected in series with the condenser bank and which controls the direct current for charging the condenser bank to a fixed current. Koike et al. do not disclose that the controller controls the second converter to supply power for the electrical motor corresponding to the required power for driving the vehicle. Koike et al. do not disclose that the second converter of the storage device further controls a discharge voltage of the condenser bank to a fixed voltage.

Deng et al. disclose that the second converter (14) is a bidirectional switching converter which is connected in series with the condenser bank (12) and which controls

the direct current for charging the condenser bank to a fixed current. Deng et al. disclose that the controller controls the second converter (14) to supply power for the electrical motor (10) corresponding to the required power for driving the vehicle. Deng et al. disclose that the second converter (14) of the storage device (12) further controls a discharge voltage of the condenser bank (12) to a fixed voltage. The invention of Deng et al. has the purpose of preventing overvoltage within an electric power converter while allowing regeneration energy to be captured with high efficiency.

It would have been obvious at the time the invention was made to modify the hybrid device of Koike et al. and provide it with the second converter disclosed by Deng et al. for the purpose of preventing overvoltage within an electric power converter while allowing regeneration energy to be captured with high efficiency.

2. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. in view of Deng et al. as applied to claims 5 and 9 above, and further in view of Araki et al. (U. S. Pat. 5,563,454).

Koike et al. and Deng et al. substantially teaches the claimed invention except that it does not show that each condenser cell of the storage device is an electrical double-layer condenser which has a large electrostatic capacity.

Araki et al. disclose that each condenser cell of the storage device is an electrical double-layer condenser (*column 2, line 64 through column 3, line 3*) for the purpose of providing a subsidiary storage device.

It would have been obvious at the time the invention was made to modify the hybrid device of Koike et al. and provide it with the condenser configuration disclosed by Araki et al. for the purpose of providing a subsidiary storage device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide condensers with an energy density greater than 10Wh/kg since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

### ***Response to Arguments***

Applicant's arguments with respect to claims 5-12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

  
NESTOR RAMIREZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Guillermo Perez  
December 10, 2002